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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,595

09/12/2003

Shoji Hara

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11/24/2006

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EXAMINER

BITAR, NANCY

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/660,595	Applicant(s) HARA, SHOJI	
	Examiner Nancy Bitar	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1- 20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of claim 1 and 11 of "a cross-section projected-image data generating means which generates, on the basis of the image data, cross-section projected-image data representing a cross-section projected-image obtained by projecting, onto a plane parallel to the designated cross section, averages of the pixel values arranged in the directions of depth in the region defined by the designated cross section and the designated depth including the designated cross section," is unclear and confusing. It is unclear what feature or element is being further defined by this claim language, so that the claim fails to clearly point out and distinctly claim applicant's invention. Claims 2-10 and 12-20 are variously dependent from claim 1 and 11 and are thus similarly indefinite.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Suzuki et al (US 6,961,911).

As to claim 1, as best understood, Suzuki discloses an image display system (3) comprising an image data obtaining means which obtains image data consisting of three-dimensional pixel values representing an object (a three-dimensional obtained by such as CT imaging is provided, column 1, lines 23-24), a cross section designating means for designating an arbitrary cross section of the object (X-sectional images, Y-sectional images, and Z-sectional images, figure 1), a depth designating means for designating a depth perpendicular to the designated cross section (z-section image note that the Z-sectional image IZ (1) is the lowest sectional image, as the number in parentheses increases, the image show upper section, and the Z-sectional image IZ (40) is the highest sectional image) a cross-section projected-image data generating means which generates, on the basis of the image data, cross-section projected-image data representing a cross-section projected-image obtained by projecting, onto a plane parallel to the designated cross section, averages of the pixel values arranged in the directions of depth in the region defined by the designated cross section and (The reference marks cx, cy, and cz show an X-cursor, a Y-cursor, and a Z-cursor each of which is a projector line of other sections such as an x-section, a Y-section and a Z-section for hewing or slice out X-sectional images,

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Y-sectional images, and Z-sectional images respectively. The reference mark P is an optional point in the 3D area S, which equals nearly to crossing point of the X, Y, Z-sections, column 3, lines 49-55), the designated depth including the designated cross section, (z-sectional image IZ, a Y-sectional image IY and an X-sectional image IX all of which include this point P are displayed in array like normal plane view, front view, and side view as three sectional displaying mode, column 3, lines 63-66). Moreover, Suzuki teaches an image processing condition setting means which sets image processing conditions on the basis of the designated depth (note that image display conditions can be adjusted by means of an image condition control means which is usually provided, column 5, lines 1-9) an image processing means which carries out image processing on the cross-section projected-image data on the basis of the image processing conditions set by the image processing condition setting means, and a display means which displays an image on the basis of the cross-section projected-image data processed by the image processing means (A display system 10 is provided with a central processing unit 1 for controlling and processing the entire system, an input/output device 2 for controlling input and output of data to the central processing unit 1, a screen 3 for displaying the data from the input/output port 2, and a keyboard/mouse 4 comprising a keyboard 4A and a mouse 4B for receiving data and input of operational direction, figure 6, column 6, lines 19-29).

As to claim 2, Suzuki teaches an image display system (3) as defined in claim 1 in which said image processing condition setting means sets the image processing conditions on the basis of the kind of the object represented by the

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image data (note that a list of display isn't limited to one kind of sectional images, column 10, lines 5-12).

As to claim 3, Suzuki teaches an image display system (3) as defined in claim 2 in which said image processing condition setting means sets the image processing conditions also on the basis of the purpose of observation of the cross-section projected-image (note that the observation of the cross-section projected image depends on the users mouse, column 4, lines 46-54).

As to claim 4 and 5, Suzuki teaches an image display system (3) as defined in claim 3 in which the image data is three-dimensional CT data (the data designated by the plural points is extracted from the 3D area and three dimensional oblique perspective figure can be obtained, column 5, lines 24-27).

As to claim 6, Suzuki teaches an image display system (3) as defined in claim 1 in which said image processing condition setting means sets the image processing conditions on the basis of the purpose of observation of the cross-section projected-image (note that the observation of the cross-section projected image depends on the users mouse, column 4, lines 46-54 .Moreover the adjustment of gamma coefficient in the image display namely coefficient showing relation of shading of each color of black and white or three primary colors on data and what a human actually sees the displayed screen is important, column 5, lines 10-27).

As to claim 7 and 8, Suzuki teaches an image display system (3) as defined in claim 6 in which the image data is three-dimensional CT data (the data

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designated by the plural points is extracted from the 3D area and three dimensional oblique perspective figure can be obtained, column 5, lines 24-27).

As to claim 9, Suzuki teaches an image display system as defined in claim 1 in which the image data represents a medical image (i.e. dental image note that Suzuki teaches the display of 3D computed tomography data).

As to claim 10, Suzuki teaches an image display system (3) as defined in claim 1 in which the image processing includes at least one of gradation processing for adjusting the density level or contrast of the image and frequency processing for enhancing components in a particular frequency band (for displaying the X-sectional image IZ, the Y-sectional image IY, and the X-sectional image IX on the screen 3, image display conditions can be adjusted by means of an image condition control means which is usually provided. When such adjustments, especially contrast and brightness of the image, are same among three images, contrast and entire brightness of images can be unified so that such images become easily viewable and suitable for medical examination (column 5, lines 1-9).

The limitation of claim 11 has been addressed above except for the following: "an image processing condition setting means which sets image processing conditions on the basis of analysis of the cross-section projected-image data". Suzuki teaches that limitation in column 4, lines 11-54. Note that the image control means is provided to the x-sectional image IZ the Y-sectional image IY and the X-sectional image IX and can control the reference marks cx, cy, and cz in order to help the operator to find a suitable sectional image.

As to claim 12, Suzuki teaches an image display system (3) as defined in claim 11 in which said image processing condition setting means sets the image processing conditions on the basis of the kind of the object represented by the image data (column 10, lines 5-12).

As to claim 13 and 16, Suzuki teaches an image display system (3) as defined in claim 12 in which said image processing condition setting means sets the image processing conditions also on the basis of the purpose of observation of the cross-section projected-image (note that the observation of the cross-section projected image depends on the users mouse, column 4, lines 46-54. Moreover the adjustment of gamma coefficient in the image display namely coefficient showing relation of shading of each color of black and white or three primary colors on data and what a human actually sees the displayed screen is important, column 5, lines 10-27).

As to claim 14 –15 and 17-18, Suzuki teaches an image display system as defined in claim 13 in which the image data is three-dimensional CT data (the data designated by the plural points is extracted from the 3D area and three dimensional oblique perspective figure can be obtained, column 5, lines 24-27).

As to claim 19, Suzuki teaches an image display system (3) as defined in claim 11 in which the image data represents a medical image (i.e. dental image note that Suzuki teaches the display of 3D computed tomography data).

As to claim 20, Suzuki teaches an image display system (3) as defined in claim 11 in which the image processing includes at least one of gradation processing for adjusting the density level or contrast of the image and frequency

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processing for enhancing components in a particular frequency band (for displaying the X-sectional image IZ, the Y-sectional image IY, and the X-sectional image IX on the screen 3, image display conditions can be adjusted by means of an image condition control means which is usually provided. When such adjustments, especially contrast and brightness of the image, are same among three images, contrast and entire brightness of images can be unified so that such images become easily viewable and suitable for medical examination (column 5, lines 1-9).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishino et al (US 5,623,583) is cited to teach a cross-section shape processing unit that computes the cross-section shape figure data for the three-dimensional figure based on the cross-section specification by the mouse control unit; a figure data editing unit that judges which parts of the three-dimensional figure including the cross-section are not to be displayed and edits the figure data; and a graphic control unit that displays the figure data on a graphic display,

Taylor et al (US 6,980,690) is cited to teach an apparatus and method of operation of a processor for generating model data for a model in a three-

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dimensional space from image data representative of a set of camera images of an object.

Inquiries

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar

11/20/06



JOSEPH MANCUSO
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